REMARKS

No claims have been added, canceled, or amended in this reply. Accordingly, claims 1-15 and 22-32 are pending, with claims 1, 3, and 32 in independent form.

Claims 5, 15, and 26 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. The Action states that it "is not clear how an LED is a detector" (Action at page 2). Applicants respectfully point out that claims 5, 15, and 26 do not merely recite an LED, but instead recite that the semiconductor chip is an *LED chip*. For example, claim 5 covers radiation detectors in which "the at least one semiconductor chip is an LED chip." That is, the chip that corresponds to the semiconductor chip in the detector has the layer structure of a LED chip, and may even have been manufactured for use in an LED, but is instead used to *detect* – rather than to *emit* – light in the radiation detector. Applicants specification discloses the use of LED chips in radiation detectors, stating that "to prematch the detector sensitivity to the defined spectral sensitivity distribution, it is possible to use LED chips of the kind employed in commercial LEDs having a III-V semiconductor material as a functional material" (Specification at pages 3-4). Use of the term "LED chip" does not indicate that the chip functions as a light emitter, but merely that it has a structure that makes the chip capable of being used in a LED. Applicants' specification discloses that commercial LEDs having a III-V semiconductor material as a functional material can also be used to *detect* radiation. The specification states that "the semiconductor chip is preferably an LED chip intended for use as a radiation emitter in a conventional LED … [which] permits low-cost implementation of the radiation detector, since an LED chip intended to function as a radiation emitter can be used as the semiconductor chip in the radiation detector, thereby avoiding the expenditure of custom-fabricating a semiconductor chip mated to the radiation detector" (Specification at page 2).

Accordingly, use of the term "LED chip" in claims 5, 15, and 26 is consistent with the disclosure in the specification. Claims 5, 15, and 26 are not indefinite because while the disclosed chips have the structure of LED chips, they are not configured to emit light but to detect light in the claimed radiation detectors. In view of the foregoing, Applicants respectfully

request reconsideration and withdrawal of the rejections of claims 5, 15, and 26 under 35 U.S.C. § 112, second paragraph.

Claims 1, 3-5, 10, 14-15, 23, and 26 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Vriens et al. (U.S. Patent No. 5,813,753, "Vriens"). Applicants respectfully disagree, and will address the rejections of each of independent claims 1 and 3 separately.

Claim 1 covers radiation detectors that detect "incident radiation according to a predetermined spectral sensitivity distribution." The detectors include at least one optical filter that "transmit[s] filtered radiation to the at least one semiconductor chip." Vriens does not disclose the claimed radiation detectors. In fact, Vriens does not disclose radiation detectors at all. Instead, Vriens' disclosure "relates to light *emitting* devices comprising a UV/blue-emitting light emitting diode (LED) and a UV/blue-excitable, visible light emitting phosphor" (Vriens, col. 1, lines 14-16, emphasis added). With reference to Figure 2 of Vriens, his device includes "a mirror 23 which reflects both the UV/blue light *generated by* the LED 21 as well as the visible light *generated by* the phosphor 24" (Vriens, col. 3, lines 20-23, emphasis added). Thus, as Vriens makes clear, his devices are not radiation detectors, they are radiation emitters.

Moreover, it follows that Vriens' devices do not, therefore, detect incident radiation "according to a predetermined spectral sensitivity distribution," as claim 1 requires. The Action alleges that this disclosure is present in Vriens (see Action at page 3), but does not indicate where it is to be found. Applicants respectfully submit that in view of the functionality that Vriens discloses regarding his devices, Vriens' devices do not detect radiation according to a predetermined spectral sensitivity distribution since they do not detect radiation at all.

Further, the Action identifies short-wave-pass filter 47 in Figure 4 of Vriens as corresponding to the at least one optical filter that "transmit[s] filtered radiation to the at least one semiconductor chip" that claim 1 requires. But Vriens' filter 47 does not transmit filtered radiation to Vriens' LED stack 41. Instead, filter 47 filters light generated by LED stack 41 before the light passes out of Vriens' device "on the front (viewing) side of the LED stack 41" (Vriens, col. 5, lines 37-38).

Accordingly, for at least the foregoing reasons, Applicants submit that claim 1 is patentable over Vriens, and respectfully request reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 102(b).

Claim 3 covers radiation detectors that are "operative to detect incident radiation according to a standard spectral sensitivity distribution of a human eye." The Action points to Figures 4 and 5 of Vriens as disclosing this subject matter (see Action at page 3). However, as discussed above, Vriens' devices are not radiation detectors at all, but light-emitting devices that include phosphors for wavelength conversion from UV/blue light to visible light. Vriens does not disclose the radiation detectors covered by claim 3.

It also follows, therefore, that Vriens does not disclose detecting radiation according to a standard spectral sensitivity distribution of a human eye. The Action points to column 3, lines 50-54 of Vriens for disclosure of this subject matter (see Action at page 3). But this portion of Vriens merely states that phosphor grains in Vriens' devices "can be either of one phosphor emitting one color … or a mixture of phosphor grains emitting different colors, to get a good color rendering" (Vriens, col. 3, lines 51-55). The cited portion of Vriens does not relate to detecting radiation according to a standard spectral sensitivity distribution, much less to a distribution of a human eye. Applicants have been unable to locate in Vriens any disclosure relating to detecting radiation according to a standard spectral sensitivity distribution of a human eye.

For at least the foregoing reasons, Applicants submit that claim 3 is patentable over Vriens, and respectfully request reconsideration and withdrawal of the rejection of claim 3 under 35 U.S.C. § 102(b).

Claims 4-5, 10, 14-15, 23, and 26 depend from one of claims 1 and 3, and are therefore patentable over Vriens for at least the same reasons. Thus, reconsideration and withdrawal of the rejections of these claims under 35 U.S.C. § 102(b) is also respectfully requested.

Claims 1-4, 11-13, 24-25, and 29-32 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Grunert et al. (U.S. Patent Application Publication No. US 2005/0072908, "Grunert"). Claims 6, 22, and 27-28 stand rejected under 35 U.S.C. § 103(a) as allegedly being

unpatentable over Grunert. Without addressing or conceding the merits of these claim rejections, Applicants believe that Grunert is not prior art to the claims of the present application, and therefore these claim rejections should be withdrawn.

The present application is a U.S. National Stage application of International Application No. PCT/DE2004/001877. International Application No. PCT/DE2004/001877 claims priority to German Patent Application No. 103 45 410.1, which was filed on September 30, 2003. Applicants therefore believe that the claims of the present application are entitled to a priority date of September 30, 2003. The official Filing Receipt for the present application acknowledges these priority claims by Applicants.

The Notice of Acceptance of Application, dated November 21, 2006, indicates that a certified copy of German Patent Application No. 103 45 410.1 was received by the Office, satisfying the priority document requirement under MPEP § 1893.03(c). Applicants have checked Public PAIR and verified that the certified copy is available electronically in the application's Image File Wrapper.

Applicants have enclosed with this reply a certified translation of German Patent Application No. 103 45 410.1, in accordance with 35 U.S.C. § 365. Based on this translation, it is Applicants' belief that the subject matter of each of the pending claims in the present application is fully supported by the disclosure of the above priority document. Thus, Applicants believe that each of the pending claims is entitled to a priority date under 35 U.S.C. § 365 of September 30, 2003.

Grunert was filed on February 20, 2004 and published on April 7, 2005, both dates falling *after* the priority date of the pending claims. Accordingly, Applicants believe that Grunert is not prior art to the pending claims under 35 U.S.C. §§ 102 and/or 103, and respectfully request reconsideration and withdrawal of the above rejections of claims 1-4, 6, 11-13, 22, 24-25, and 27-32 under 35 U.S.C. §§ 102(e) and 103(a).

Claims 1, 3-4, and 7-9 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Manning (U.S. Patent No. 3,903,413, "Manning") in view of Grunert. Without addressing or conceding the merits of the proposed combination of Manning and

Grunert, Applicants note that Grunert is not prior art to the claims of the present application as explained above. Therefore, Applicants submit that the above rejections of claims 1, 3-4, and 7-9 should be withdrawn.

Applicants also wish to comment on claims 1 and 3 as they relate to Manning. Claims 1 and 3 each cover radiation detectors that include at least one semiconductor chip that "comprises at least one III-V semiconductor material." The Action acknowledges that "Manning does not disclose … [that] the at least one semiconductor chip comprises at least one III-V semiconductor material" (Action at page 8).

Grunert is not prior art to the claims of the present application, and therefore does not cure Manning's deficiencies in this regard. Applicants further submit that, even if Grunert was prior art to the claims of the present application, there would have been no reason based on Manning's disclosure to modify Manning to include a semiconductor chip that "comprises at least one III-V semiconductor material."

The present application discloses that to detect radiation with a predetermined spectral sensitivity distribution – particularly, a spectral sensitivity distribution that corresponds to a standard sensitivity distribution of the human eye – a "silicon photodiode is often used" (Specification at page 1) in conventional detectors. The application also discloses that the sensitivity maximum of a silicon photodiode "is located at about 800 nm" (Specification at page 1). Therefore, "[t]o use such a silicon photodiode as a detector with the spectral sensitivity distribution of the bright-adapted human eye, which has a sensitivity maximum at about 555 nm, requires extra expenditure since the wavelengths of the sensitivity maxima differ greatly from each other and the two spectral sensitivity distributions are therefore relatively poorly matched" (Specification at page 1). The specification discloses that to achieve an improved match between the two spectral sensitivity distributions, "[a] radiation detector for detecting radiation according to a defined spectral sensitivity distribution … [includes] at least one semiconductor chip containing a III-V semiconductor material" (Specification at page 2).

Manning is not directed to the problem of detecting radiation according to a spectral sensitivity distribution of the human eye. Instead, Manning's device includes a silicon

photodiode with a spectral response that is corrected to the "sensitivity of typical color photographic film [which] is confined to the visible region of the spectrum, i.e., from about 400 nm to about 700 nm" (Manning, col. 5, lines 56-58). Manning states that "a correction filter with peak absorption in the near-infrared region of the spectrum, i.e., from about 700 nm to about 1200 nm, and high transmission in the visual region from about 400 nm to about 700 nm, should be used in association with the silicon photodiode to 'correct' its spectral response in relation to the film" (Manning, col. 5, line 62, through col. 6, line 1).

Manning does not consider the problem of correcting a photodiode to a standard sensitivity distribution of the human eye. Accordingly, given that Manning is concerned with photographic film, he does not even appear to consider the possibility of using a diode that includes a III-V semiconductor material. He does not appear to recognize that to improve the performance of his detector, a chip that includes at least one III-V semiconductor material could be used. A person of skill in the art, upon reading Manning, would therefore find no reason to modify Manning to include "at least one semiconductor chip ... [that includes] at least one III-V semiconductor material," as required by both claims 1 and 3.

For all of the above reasons, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 1, 3-4, and 7-9 under 35 U.S.C. § 103(a).

In view of the foregoing, Applicants ask that the application be allowed.

Canceled claims, if any, have been canceled without prejudice or disclaimer. Any circumstance in which Applicants have: (a) addressed certain comments of the Examiner does not mean that Applicants concede other comments of the Examiner; (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims; or (c) amended or canceled a claim does not mean that Applicants concede any of the Examiner's positions with respect to that claim or other claims.

No fees are believed to be due. Please apply any charges or credits to Deposit Account 06-1050, referencing Attorney Docket No. 12406-0164US1.

Respectfully submitted,

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